

## CLAIMS

What is claimed is:

- 1    1.     A drill steel for securing bolts in a mine roof, comprising:  
2                a head having a first end engageable with a roof bolt, and an extension on a  
3                second end of said head extending therefrom, said extension having a machined recess  
4                formed therein;  
5                a collar having an opening therethrough; and  
6                a body having a first end and a second end, wherein:  
7                        said first end is adapted for establishing a press fit connection  
8                        between said first end of said body and said machined recess of said  
9                        socket extension, and  
10                        said second end is adapted for establishing a press fit connection  
11                        between said collar and said second end of said body;  
12                        wherein both said first end and said second end of said body and  
13                        said machined recess in said socket extension are formed as polygonal  
14                        in cross section.
- 1    2.     The drill steel of Claim 1 wherein said first end of said body is square in cross section  
2                and said socket recess is likewise square.
- 1    3.     The drill steel of Claim 1 wherein said second end of said body is hexagonal in cross  
2                section and the opening of said collar conforms thereto.

1 4. The drill steel of Claim 1 wherein both of said polygonal surfaces on said body are square  
2 in cross section.

1 5. The drill steel of Claim 1 wherein both of said polygonal surfaces on said body are  
2 rectangular in cross section.

1 6. The drill steel of Claim 1 wherein both of said polygonal surfaces on said body are  
2 hexagonal in cross section.

1 7. The drill steel of Claim 1 wherein said first end is adapted for establishing a press fit  
2 connection between said first end of said body and said machined recess of said extension by  
3 having machined surfaces on said first end of said body.

1 8. The drill steel of Claim 1 wherein said second end is adapted for establishing a press fit  
2 connection between said collar and said second end of said body by having machined surfaces on  
3 said second end of said body.

1 9. The drill steel of Claim 1 wherein said first end of said head defines a socket for  
2 engaging said roof bolts.

1 10. The drill steel of Claim 1 wherein:  
2 said first end is adapted for establishing a press fit connection between said first  
3 end of said body and said machined recess of said extension by having machined surfaces

4 on said first end of said body;

5 said second end is adapted for establishing a press fit connection between said  
6 collar and said second end of said body by having machined surfaces on said second end  
7 of said body; and

8 said machined surfaces on said second end of said body are longer than said  
9 machined surfaces on said first end of said body.

1 11. A drill steel for securing bolts in a mine roof, comprising:

2 a generally elongate body, said body having a first machined end machined into  
3 the form of a polygon in cross-section, and a second machined end opposite said first  
4 machined end, said second machined end machined into the form of a polygon in cross-  
5 section;

6 a socket, said socket comprising a first end engageable with a bolt, and an  
7 extension extending from a second end of said socket and press-fit onto said first  
8 machined end of said elongate body, said extension having a machined recess formed  
9 therein defined by a plurality of walls extending into said extension, said plurality of  
10 walls defining a perimeter of said machined recess, said perimeter of said machined  
11 recess being dimensioned to form a press-fit connection between said extension and said  
12 first end of said elongate body; and

13 an annular collar press-fit onto said second machined end of said elongate body,  
14 said annular collar having a machined opening extending therethrough and defining a  
15 perimeter of said machined opening, said perimeter of said machined opening being

16        dimensioned to form a press-fit connection between said annular collar and said second  
17        end of said elongate body.

1    12.    The drill steel of Claim 11 wherein said first machined end of said body is square in cross  
2    section and said socket recess is likewise square.

1    13.    The drill steel of Claim 11 wherein said second machined end of said body is hexagonal  
2    in cross section and the machined opening of said collar conforms thereto.

1    14.    The drill steel of Claim 11 wherein both said first machined end and said second  
2    machined end of said body are rectangular in cross section.

1    15.    The drill steel of Claim 11 wherein both said first machined end and said second  
2    machined end of said body are square in cross section.

1    16.    The drill steel of Claim 11 wherein both said first machined end and said second  
2    machined end of said body are hexagonal in cross section.

1    17.    The drill steel of Claim 11 wherein said second machined end of said body is longer than  
2    said first machined end of said body.